

# SpaceX close to figuring out rocket failure during launch

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In this June 28, 2015 file photo, the SpaceX Falcon 9 rocket and Dragon spacecraft breaks apart shortly after liftoff from the Cape Canaveral Air Force Station in Cape Canaveral, Fla. SpaceX says it is still trying to figuring out what caused its rocket to break apart during liftoff nine days ago, but it's getting close. The unmanned Falcon 9 rocket had just lifted off from Cape Canaveral, Florida, on June 28, carrying cargo for the International Space Station, when the accident occurred. (AP Photo/John Raoux, File)

SpaceX still is trying to figure out what caused its rocket to break apart during liftoff nine days ago, but is getting close to an answer, the company's chief executive said Tuesday.

The unmanned Falcon 9 rocket carrying cargo for the International Space Station had just lifted off on June 28 when the accident occurred.

Speaking Tuesday at a conference in Boston, SpaceX founder Elon Musk said the trouble appeared to be in the upper stage, with an over-pressurization of the liquid oxygen tank. Nevertheless, the California-based company is putting together what he calls a "super-detailed" timeline, millisecond by millisecond.

So far, nothing seems to fit "all the dots," Musk told attendees of the space station research and development conference. But he hopes to have something definitive to say by week's end.

Musk said the accident was "a huge blow" to SpaceX. It occurred on his 44th birthday—"a real downer."

The main intent was to deliver more than 5,000 pounds of supplies and equipment to the space station, including the first of two docking ports for crew capsules in development by SpaceX and Boeing. The Dragon capsule carrying all the cargo slammed into the ocean, along with the rocket wreckage.

A secondary objective, at least for the company, was an attempt to land the first-stage booster on an ocean platform just off the Jacksonville, Florida, coast. Previous tries had failed, and Musk considered it his best chance to achieve a solid vertical touchdown—until the entire rocket was lost in flight.

Musk told the crowd that he sees rocket reusability as key to lowering

spaceflight costs and opening up space travel to the masses. He noted that any business, especially involving space, needs to take big chances to attain big success.

The company's six previous delivery missions contracted by NASA had gone exceedingly well, as did a trial run in 2012.

Overall, it was the third lost shipment in eight months—Orbital Sciences Corp. in October, the Russian space program in April, then SpaceX in June.

NASA's space station program manager Mike Suffredini said at the conference that the three failed missions have had "a big impact to us."

"Never in my wildest dreams," Suffredini said, did he think so many cargo ships would go down in such a short period. The same crew provisions were reflown to make up for the failed missions, and three times ended up being lost. "The crew does need their clothes," Suffredini noted wryly.

On a brighter note, the Russians apparently corrected their rocket trouble and successfully launched a cargo ship to the orbiting lab late last week. The Japanese Space Agency is on track to send up supplies in mid-August. And Orbital Sciences plans to fly its Cygnus cargo carrier aboard another company's Atlas rocket in December, while its own Antares rocket remains grounded following last fall's explosion over the launch pad.

Suffredini pointed out that the three astronauts aboard the space station are healthy and safe, with plenty of scientific work. Three more crewmen are set to launch from Kazakhstan later this month.

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